

Element Materials Technology - Fort Wayne 328 Ley Rd. Fort Wayne, IN 46825 TEL: (260) 424-1622 FAX: (260) 424-9124 Website: www.element.com

October 24, 2019

Nickie Geros East Chicago Sanitary District 5201 Indianapolis Blvd East Chicago, IN 46312

TEL: 219-391-8466

FAX:

RE: S-901

Dear Nickie Geros: Order No.: 19101999

Element Materials Technology - Fort Wayne received 2 sample(s) on 10/17/2019 for the analyses presented in the following report.

In accordance with your instructions, Element Materials Technology Indiana conducted the analysis shown on the following pages on samples submitted by your company. The results relate only to the items tested. Unless otherwise noted, all analysis was conducted using approved methodologies from EPA, SM, or other client-specified methods. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by Element Materials Technology Indiana.

This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Ryan Fitzwater

General Manager

328 Ley Rd.

Fort Wayne, IN 46825

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Element Materials Technology - Fort Wayne 328 Ley Rd.

Fort Wayne, IN 46825

TEL: (260) 424-1622 FAX: (260) 424-9124 Website: www.element.com **Case Narrative** 

WO#: **19101999**Date: **10/24/2019** 

**CLIENT:** East Chicago Sanitary District

**Project:** S-901

OIA1677 Available Cyanide subcontracted to Eurofins. The report is attached in its entirety.

The surrogate recoveries for some compounds were outside of acceptance limits for the 625\_Special analysis on sample 19101999-001C due to suspected matrix interference. This data is reported based upon the acceptable recoveries in additional associated QC.



East Chicago Sanitary District

Element Materials Technology - Fort Wayne

328 Ley Rd.

Fort Wayne, IN 46825

TEL: (260) 424-1622 FAX: (260) 424-9124 Website: www.element.com **Analytical Report** 

(wastewater)

WO#: 19101999 Date Reported

10/24/2019

**Collection Date:** 10/16/2019 9:28:00 AM

**Project:** S-901

Lab ID: 19101999-001 **Matrix:** WASTEWATER

Client Sample ID #901

**Sample Location:** 

**CLIENT:** 

Analyses	Result	RL Qu	al Units	DF	PL	Date Analyzed
OIL AND GREASE, TOTAL				E1664		Analyst: <b>HF</b>
Oil & Grease, Total	< 5.0	5.0	mg/L	1	50.0	10/18/2019 12:11:10 PM
OIL AND GREASE, NON POLAR				E1664		Analyst: <b>HF</b>
Oil & Grease, Petroleum	< 5.0	5.0	mg/L	1	50.0	10/18/2019 12:11:10 PM
SV COMPOUNDS FOR CATEGORIC	AL RQTS			E625		Analyst: <b>SF</b>
Bis(2-ethylhexyl)phthalate	< 0.020	0.020	mg/L	2	0.16	10/23/2019 2:02:00 PM

Qualifiers: Value exceeds Maximum Contaminant Level

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quantitation Limit

Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank

Manual Integration used to determine area response M

PL Permit Limit

Reporting Detection Limit



Element Materials Technology - Fort Wayne

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**Analytical Report** 

(wastewater)

WO#: 19101999 Date Reported 10/24/2019

**CLIENT:** East Chicago Sanitary District **Collection Date:** 10/16/2019 9:28:00 AM

**Project:** S-901

Lab ID: 19101999-002 **Matrix:** WASTEWATER

Client Sample ID #901

**Sample Location:** 

3.3 56	0.2	*	mg/L	<b>E300.0</b> 2	2.9	Analyst: <b>HN</b>
		*			2.9	10/18/2019 4:53:32 PM
56	10.0		ı	ME000 B		
56	10.0			M5220 D		Analyst: MAF
			mg/L	1		10/22/2019 2:30:00 PM
				E350.1		Analyst: AC
0.6 0.	.500		mg/L	5	77.0	10/21/2019 12:04:05 PM
				E420.1		Analyst: ANS
49 0.	.050		mg/L	2	0.700	10/22/2019 2:20:12 PM
			M	14500-P F		Analyst: <b>HN</b>
00 0.	.100		mg/L	1	5.50	10/21/2019 3:22:52 PM
			ı	M2540 D		Analyst: MAF
28	14		mg/L	1		10/21/2019 4:30:00 PM
				E245.1		Analyst: <b>FJR</b>
10 0.00	0010		mg/L	1		10/22/2019 12:27:42 PM
				E200.8		Analyst: FJR
05 0.00	0020	В	mg/L	1	0.500	10/22/2019 1:54:19 PM
	00 0 28 110 0.00	00 0.100 28 14	00 0.100 28 14	N 00 0.100 mg/L l 28 14 mg/L mg/L mg/L	M4500-P F  00 0.100 mg/L 1  M2540 D  28 14 mg/L 1  E245.1  10 0.00010 mg/L 1  E200.8	M4500-P F  00 0.100 mg/L 1 5.50  M2540 D  28 14 mg/L 1  E245.1  10 0.00010 mg/L 1  E200.8

Qualifiers: Value exceeds Maximum Contaminant Level

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitation Limit

Spike Recovery outside accepted recovery limits

Analyte detected in the associated Method Blank

Manual Integration used to determine area response M

PL Permit Limit

Reporting Detection Limit

Revision v1



Element Materials Technology - Fort Wayne

328 Ley Rd.

Fort Wayne, IN 46825

TEL: (260) 424-1622 FAX: (260) 424-9124 Website: www.element.com **Analytical Report** 

(wastewater)

WO#: **19101999** 

Date Reported 10/24/2019

**Collection Date:** 10/16/2019 9:28:00 AM

**Matrix:** WASTEWATER

**CLIENT:** East Chicago Sanitary District

**Project:** S-901

**Lab ID:** 19101999-002

Client Sample ID #901

**Sample Location:** 

Analyses	Result	RL	Qual	Units	DF	PL	Date Analyzed
METALS IN WATER BY IC	P-MS, TOTALS				E200.8		Analyst: FJR
Lead	0.00032	0.00020	В	mg/L	1	0.224	10/22/2019 1:54:19 PM
Molybdenum	0.0244	0.00020		mg/L	1	0.200	10/22/2019 1:54:19 PM
Nickel	0.0121	0.00100	В	mg/L	1	0.390	10/22/2019 1:54:19 PM
Zinc	0.0836	0.00040		mg/L	1	1.48	10/22/2019 1:54:19 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quantitation Limit

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

M Manual Integration used to determine area response

PL Permit Limit

RL Reporting Detection Limit

# **ANALYTICAL REPORT**

Eurofins TestAmerica, Pittsburgh 301 Alpha Drive RIDC Park Pittsburgh, PA 15238

Tel: (412)963-7058

Laboratory Job ID: 180-97462-1

Client Project/Site: Cyanide 19101999

For:

Element Materials Technology 328 Ley Rd Suite100 Fort Wayne, Indiana 46825

Attn: Katie Hernandez

Authorized for release by: 10/22/2019 1:53:59 PM

Dominic Nestasie, Manager of Project Management (412)963-2453

dominic.nestasie@testamericainc.com

..... LINKS .....

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

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#### **Case Narrative**

Client: Element Materials Technology Project/Site: Cyanide 19101999 Job ID: 180-97462-1

Job ID: 180-97462-1

Laboratory: Eurofins TestAmerica, Pittsburgh

**Narrative** 

Job Narrative 180-97462-1

#### Receipt

The sample was received on 10/18/2019 9:00 AM; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was  $2.0^{\circ}$  C.

#### **General Chemistry**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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## **Definitions/Glossary**

Client: Element Materials Technology Job ID: 180-97462-1

Project/Site: Cyanide 19101999

**Glossary** 

Abbreviation	These commonly used abbreviations may or may not be present in this report.					
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis					
%R	Percent Recovery					
CFL	Contains Free Liquid					
CNF	Contains No Free Liquid					
DER	Duplicate Error Ratio (normalized absolute difference)					

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MDA Minimum Detectable Activity (Radiochemistry)
MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

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# **Accreditation/Certification Summary**

Client: Element Materials Technology
Project/Site: Cyanide 19101999
Job ID: 180-97462-1

# Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	<b>Expiration Date</b>
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State	434	12-31-19
North Dakota	State	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
South Carolina	State	89014	04-30-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	01-31-20
Wisconsin	State	998027800	08-31-20

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# **Sample Summary**

Client: Element Materials Technology Project/Site: Cyanide 19101999

Job ID: 180-97462-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-97462-1	19101999-001A	Water	10/16/19 09:28	10/18/19 09:00	

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# **Method Summary**

Client: Element Materials Technology Project/Site: Cyanide 19101999

Job ID: 180-97462-1

Method	Method Description	Protocol	Laboratory
OIA - 1677	Available Cyanide by Flow Injection, Lig	EPA	TAL PIT

#### **Protocol References:**

EPA = US Environmental Protection Agency

#### **Laboratory References:**

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

### **Lab Chronicle**

Client: Element Materials Technology Job ID: 180-97462-1

Project/Site: Cyanide 19101999

Client Sample ID: 19101999-001A Lab Sample ID: 180-97462-1

Date Collected: 10/16/19 09:28 Matrix: Water

Date Received: 10/18/19 09:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	OIA - 1677		1			295577	10/21/19 12:11	CAK	TAL PIT
	Instrument	ID. VI BKEM3								

#### **Laboratory References:**

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

#### **Analyst References:**

Lab: TAL PIT

Batch Type: Analysis

CAK = Chuck Kieda

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## **Client Sample Results**

Client: Element Materials Technology

Job ID: 180-97462-1

Project/Site: Cyanide 19101999

Client Sample ID: 19101999-001A Lab Sample ID: 180-97462-1

Date Collected: 10/16/19 09:28 Matrix: Water Date Received: 10/18/19 09:00

General ChemistryAnalyteResult Cyanide, AvailableQualifier O.078RL O.0020MDL O.0036Unit MDL O.0036D Prepared Mg/LAnalyzed Mg/LD D.01/19 12:11

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# **QC Sample Results**

Client: Element Materials Technology Job ID: 180-97462-1

Project/Site: Cyanide 19101999

Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

Lab Sample ID: MB 180-295577/23 **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA** 

**Analysis Batch: 295577** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Cyanide, Available 0.0020 10/21/19 11:45 0.00036 mg/L ND

Lab Sample ID: LCS 180-295577/22 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 295577 LCS LCS Spike

Added Analyte Result Qualifier Unit D %Rec Limits 0.0501 0.0482 Cyanide, Available mg/L 96 82 - 132

%Rec.

# **QC Association Summary**

Client: Element Materials Technology
Project/Site: Cyanide 19101999
Job ID: 180-97462-1

## **General Chemistry**

#### **Analysis Batch: 295577**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97462-1	19101999-001A	Total/NA	Water	OIA - 1677	
MB 180-295577/23	Method Blank	Total/NA	Water	OIA - 1677	
LCS 180-295577/22	Lab Control Sample	Total/NA	Water	OIA - 1677	

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CHAIN OF CUSTODY RECORD

TEL: (260) 424-1622 FAX: (260) 424-9124

Fort Wayne, IN 46825

328 Ley Rd.

Element Materials Technology - Fort

OF:

PAGE:

Omega COCID 124594

element

Website: www.element.com COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description Duc. 10.23.19 PO# EFW034766 NUMBER OF CONTAINERS SPECIAL INSTRUCTIONS / COMMENTS 10/16/2019 9:28:00 AM DATE COLLECTED MATRIX 500HDPENAOH Wastewater Test America Pittsburgh BOTTLE TYPE PHONE: (800) 765-0980 FAX: (615) 726-3404 EMAIL: CLIENT SAMPLE ID COMPANY S-901 CITY, STATE, ZIP. Nashville, TN 37204 SUB CONTRATOR: TEST\_AMERICA Sample Receiving CYAN\_FREE (OIA1677) SAMPLE ID 19101999-001A ACCOUNT #: ITEM #



REPORT TRANSMITTAL DESIRED: Time: Action of the state of	Date: Time: Received By: Date: Time:   HARDCOPY (extra cost)   FAX   EMAIL   ONLINE	Date: Time: Received By: Date: Time: FOR LAB USE ONLY	Standard RUSH Next BD 2nd BD 3rd BD Comments.	Note: RUSH requests will incur surcharges!
Relinquished By Successful Assault	Relinquished By:	Relinquished By:	TAT: Standa	

Available

Client: Element Materials Technology

Job Number: 180-97462-1

Login Number: 97462 List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Say, Thomas C

orcator. day, momas o		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Chain of Custody

	Laborate
	boratory mber:
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1	2
1	0
1	0

Which Regulations Apply:	E-mail Address:	Fax Number:	Number:	City, State Zip:	! !	Address:	Contact Name:	_	
ons Apply:	ngeros@eastchicago.com		Number: 219-391-8466	East Chicago IN 46312		5201 Indianapolis Blvd	Nickie Geros	East Chicago Sanitary District	Client Information:
Turn Time	o.com		Ext. 240	IN 46312		oolis Blvd		anitary District	n:
(Rush turn times Container Pres								Same	Billing Information:
Container			Ext						
Pres	No	□Yes	Bill Monthly		Required QC Level		Quote Number:		PO Number:
Requested Tasts	DHL / Element / Hand / Mail	UPS / FedEx / Airborne	Shipping Method:	1	1	Sampler's Signature	The last control and the contr	S-901	Project Name/Number:
Comments	PW = Produced Water CF = Completion Fluid	NG = Natural Gas		SL = Sludge SOL = Solid	AQ = Aqueous	GW = Ground Water	DW = Drinking Water		Page 1 of 1

Composite Sampler: ルカー	mposite	င္ပ		Time	Date/Time				ed by	Received by	)	\	Date/Time	Dat		Relinquished by	
_		-															
	×	×				-			NONE	ס	2	W	Comp		_	S-901 Composite	S-9
1	+		×						H2SO4	G	_	WW	Comp			S-901 Composite	S-9
- 1				×					H2SO4	P	_	W	Comp			S-901 Composite	S-9
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												54					
	+					×			NONE	G	٦	W	Grab	_		S-901 Grab	S-9
	+						×		H2SO4	G	_	WW	Grab			S-901 Grab	S-S
								×	NAOH	Р	1	W	Grab	9:28	10-16-19	S-901 Grab	S-S
Mo, Ni, Zn, & Hg,	TS	300	РН	NH	*Me	Bis(	Oil	CY	HCI N	Typ P= G=	Qu	Matrix	Grab / Composite	Time	Date	Sample ID/Description	Sam
*As Cr Cii Ph	S	50000000	ΕN	3, T.	tals	2EH	& G	ΆN	, H aOI	Pla	ian		nation	Collection Information	Collection		
Acceptance Policy Yes No			OL	PHOS, CO		H) Phthalat	rease	IIDE 167	NO <sub>3,</sub> H <sub>2</sub> S H, Na <sub>2</sub> S <sub>2</sub> (	stic, iss, V=Via	tity	by	must be pre- approved by lab.)			□NPDES □Special □USDA/FDA □State □RECAP/RISC □Other	USDA/F
Complex Mont	<u> </u>			DD		te		7	SO₄, O₃	al		e and	surcharge and			П	□POTW
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o control of the cont													i			h Boardations Analys	Whi

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31 Columbus, IN 47201 USA P 812-375-0531 F 812-375-0731

2 \_

10-17-19 0.17.19

15:48 10:45 AM

10-17 10.17

Received at lab on ice?

☑Yes □No

Temp:3.6C

End Date/Time: 10-17-19 Start Date/Time: 10-16-19 Composite Sampler: Henry

10:45

328 Ley Road, Suite 100 Fort Wayne, IN 46825 USA P 260-471-7000 F 260-471-7777

909 Executive Dr. P 574-267-3305 F 574-269-6569 Warsaw, IN 46580 USA

3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707

2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540